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ABSTRACT

This report presents the results of a computer usage survey/inventory, the ninth in a series conducted at the University of Tennessee at Chattanooga to obtain information on the changing status of computer usage in the curricula. Data analyses are reported in 11 tables, which include comparisons between annual inventories and demonstrate growth patterns in university computer facilities. Variables studied include the number of courses using computers, faculty computer usage, primary method of using computers in a course, the relationship of computing to the course, number of hours of computer usage per student, computer facilities used in curricula, connect and CPU time, and number of jobs transmitted to University of Tennessee-Knoxville facilities. Inventories are then presented by departments within the College of Arts and Sciences, School of Business Administration, School of Education, School of Engineering, College of Health and Human Services, and undergraduate and special programs. It is noted that the findings of this survey continue the trend of two previous inventories, which showed a rise in microcomputer usage and a corresponding drop in mainframe usage. (CGD)

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CENTER OF EXCELLENCE FOR COMPUTER APPLICATIONS (CECA)

**University of Tennessee
at Chattanooga**

SUMMARY OF COMPUTER USAGE AND INVENTORY OF COMPUTER UTILIZATION IN CURRICULUM FY 1987-88

September 1988

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Elisabeth M. Craig

IR052611

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AND INVENTORY OF
COMPUTER UTILIZATION
IN CURRICULUM FY 1987-88**

CENTER OF EXCELLENCE FOR
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Evaluation of FY 1987 - 88 Computer Usage Survey

In 1976, when the first inventory was conducted, faculty and students had access to only two computer facilities - the HP2000 and a remote line to the IBM 360 computers at UT-K. In contrast, today the UTC community could choose to use one of four microcomputer clusters or to access one of three available mainframe systems in FY 1987-88. This growth is reflected in the 1988 Inventory of Courses which shows that the number of courses using computers has more than tripled in the period 1976 to 1988. Since last year's inventory, 12 courses have incorporated computer usage -- an approximate 20% increase.

The 1988 Inventory is the ninth in the series published on a regular basis since 1976. These nine documents have provided valuable information about the changing status of computer usage in the curricula at UTC. The 11 tables included in this FY 87 - 88 Inventory provide a comparison between annual inventories and also demonstrate growth patterns. The first six tables summarize the information. Tables 7 and 8 show the connect time and CPU times for different accounts on the HP3000 systems from 1984 to 1988. Table 9 reports usage of the RJE facilities to UT-K for the years 1984 to the present. Tables 10 and 11 report the usage of the IBM 4381 system for the past two years by department and by month. (For the sake of brevity, counts for FY 1978, 1980, and 1982 are shown as an average in some tables.)

FY 1987 - 88 continues the trend of two previous inventories which showed a rise in microcomputer usage and a corresponding drop in mainframe usage. This trend has been accelerated by the opening, in FY 1987-88, of two new microcomputer labs. The Hunter 407 facility contains 25 Mac SEs networked to four printers. The Grote 226 cluster is equipped with 20 IBM PCs. A lab containing 10 SEs is available for Developmental Studies students in Hooper.

In the the summer of 1988 the HP3000 Series III was disconnected after ten years of service. This fall an HP950 (Spectrum) system, offering state-of-the-art technology, will be made available to faculty and will be used for classroom instruction in Spring 1989.

This inventory could not have been produced without the support of all the academic departments. Their assistance is greatly appreciated.

Beth Craig, Supervisor - User Services

TABLE 1

Number of Courses Using Computers (1976-1988)

(Addition sign after number indicates "at least")

<u>DEPARTMENT</u>	<u>Average</u> <u>1976-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>College of Arts & Sciences</u>						
Art	0	4	3	5	2	3
Biology	1	3	3	3	3	4
Chemistry	7	8	9	11	10	10
Communications	-	-	-	-	-	1
English	2	3	3	3	4	5
Environmental Studies	0	2	2	*	*	*
Foreign Language	2	6	6	6	6	6
General Science	2	0	1	1	1	1
Geoscience	0	1	1	3	3	7
Interdisc. Studies	0	1	1	1	1	0
Mathematics	9	12	8	7	7	7
Music	4	4	4	4	4	4
Physics	6	6	6	10	10	13
Political Science	1	2	2	4	4	4
Psychology	7	8+	9	9	9	11
Sociology/Anthropology	1	1	1	1	1	1
Subtotal	42	61+	59	68	65	77
<u>School of Business Administration</u>						
Accounting/Finance	1	3	6	12	15	15
Business Administration	4	-	-	-	-	-
Economics	1	0	0	0	0	0
Management/Marketing	5	-	-	-	-	-
Management	-	9	12	11	14	14
Marketing	-	0	0	1	1	1
Office Administration	0	2	3	3	4	2
Subtotal	11	14	21	27	34	32
<u>School of Education</u>						
Educational Administration & Supervision (counted under Ed.)	1	3	2	2	2	2
Curriculum & Instruction	2	4	4	4	4	2
Health & Physical Education	1	1	1	1	1	2
Home Economics	1	0	0	0	0	0
Special Education	0	2	2	2	2	0
Subtotal	5	10	9	9	9	6

Number of Courses Using Computers (cont'd)

<u>DEPARTMENT</u>	<u>Average 1976-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>School of Engineering</u>						
Computer Science	16	26	30	31	30	32
Engineering	17	16	23	33	33	36
Subtotal	<u>33</u>	<u>42</u>	<u>53</u>	<u>64</u>	<u>63</u>	<u>68</u>
<u>College of Health and Human Service</u>						
Criminal Justice	1	4	6	6	6	6
Human Services	-	-	-	-	-	4
Nursing	0	1	1	0	0	0
Social Work	1	1	1	1	3	2
Subtotal	<u>2</u>	<u>6</u>	<u>8</u>	<u>7</u>	<u>9</u>	<u>12</u>
<u>Undergraduate and Special Programs</u>						
Special Services	0	0	1	1	1	1
Subtotal	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>
GRAND TOTAL (All Departments)	93	133	151	176	181	196

Note: Departments with no computer usage have zeros in those columns.
 Departments which have been reorganized or created since 1978 have dashes (-).

* In FY 85-86 Environmental Studies & Geosciences were combined.

TABLE 2

Summary of Faculty Computer Usage (1976-1988)

(Addition sign after number indicates "at least")

<u>DEPARTMENT</u>	<u>Average 1976-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>College of Arts & Sciences</u>						
Art	0	1	1	1	1	1
Biology	1	2	2	2	2	2
Chemistry	6	9	9	10	9	7+
Communications	-	-	-	-	-	1
English	7+	10+	10+	10+	10+	2+
Environmental Studies	0	0	3	2*	2*	*
Foreign Language	0	1	1	1	1	1
General Science	1	0	1	1	1	1
Geoscience	0	1	1	2	1	3+
Interdisc. Studies	0	1	1	1	1	0
Mathematics	10+	8	4	6	6	6
Music	5	3	3	3	3	2
Physics	4+	4	4	5	5	6
Political Science	1	2	2	3	3	3
Psychology	4+	3	4	4	4	5
Sociology/Anthropology	1	3	4	1	3	3
	—	—	—	—	—	—
Subtotal	39+	48+	50+	52+	52+	43+
<u>School of Business Administration</u>						
Accounting/Finance	1	2	6	8	10	10
Business Administration	2	-	-	-	-	-
Economics	1	0	0	0	0	0
Management/Marketing	2	-	-	-	-	-
Management	-	7	8	5	7	8
Marketing	-	0	0	1	1	1
Office Administration	0	2	1	1	2	2
	—	—	—	—	—	—
Subtotal	6	11	15	15	20	21
<u>School of Education</u>						
Educational Administration & Supervision (counted under Ed.)	0	2	2	-	1	1
Curriculum & Instruction	2	4	3	3	3	2
Health & Physical Education	1	1	1	1	1	2
Home Economics	1	0	0	0	0	0
Special Education	0	1	1	1	1	0
	—	—	—	—	—	—
Subtotal	4	8	7	6	6	5

Summary of Computer Usage by Faculty (cont'd)

<u>DEPARTMENT</u>	<u>Average 1976-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
<u>School of Engineering</u>						
Computer Science	14+	9+	11+	11+	10+	10+
Engineering	9+	10+	10+	10+	19+	21+
	—	—	—	—	—	—
Subtotal	23+	19+	21+	21+	29+	31+
<u>College of Health and Human Service</u>						
Criminal Justice	1	2+	4+	4+	4+	5+
Human Services	-	-	-	-	-	4
Nursing	0	1	1	0	0	0
Social Work	1	1	1	2	1	1
	—	—	—	—	—	—
Subtotal	2	4+	6+	6+	5+	10+
<u>Undergraduate and Special Programs</u>						
Special Services	0	0	0	0	2	2
	—	—	—	—	—	—
Subtotal	0	0	0	0	2	2
GRAND TOTAL (All Departments)	74+	90+	99+	100+	114+	112+

Note: Departments with no computer usage have zeros in those columns.
 Departments which have been reorganized or created since 1978 have dashes (-).

* In FY 85-86 Environmental Studies & Geosciences were combined.

TABLE 3

Primary Method of Using Computers in Course

	<u>Average 1978-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Simulation	26	16	16	20	16	15
CAI	25	23	27	30	26	20
Problem Solving	30	38	52	62	66	65
Data Analysis	23	31	32	32	28	28
Graphics	2	12	6	8	3	4
Multi-Use	0	0	7	14	34	44
Word Processing	0	2	0	2	1	9
Report Writing	0	0	2	1	1	1
Others						
(Logic & Systems Design, etc.)	3	10	6	5	4	8
Not stated	0	0	3	2	2	2
Total	<u>109</u>	<u>132</u>	<u>151</u>	<u>176</u>	<u>181</u>	<u>196</u>

Explanation of Terms Used in Table 3

<u>Types of Material</u>	<u>Description</u>
Simulation	Computer modeling or simulation of real world events so as to achieve a measure of realism (e.g. GHETTO, many of the CONDUIT packages).
CAI (Computer Aided Instruction)	Material of both a tutorial and remedial nature. The computer has some management of the material that is presented. (e.g. English CAI).
Problem Solving	Programs composed by students to solve a problem. Also, it can refer to the execution of an existing program that has already been entered (canned program).
Data Analysis	Prepared programs which may be used in either interactive or batch mode. These packages may be applied either to student-entered data or existing data sets. (e.g. SPSS, QSTAT, BMDP, SAS, etc.)
Graphics	Programs (either "canned" or written by students) which display lines, curves, points, etc. on terminals. (Generally either the Tektronix 4107 or HP XY Plotter are used.)

TABLE 4
Relationship of Computing to Course
Number of Courses

	<u>Average</u> <u>1978-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Integral	54	85	99	121	129	147
Integral/Supplementary	4	3	0	0	0	0
Supplementary	29	30	30	34	30	32
Supplementary/Incidental	2	0	2	3	2	3
Incidental or not required	16	13	16	15	18	12
Not stated	1	1	4	3	2	2
Total	<u>106</u>	<u>132</u>	<u>151</u>	<u>176</u>	<u>181</u>	<u>196</u>

Relationship of Computing to Course by Percentage

	<u>Average</u> <u>1978-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Integral	49.5%	64.4%	65.6%	68.8%	71.3%	75.0%
Integral/Supplementary	3.9%	2.2%	0.0%	0.0%	0.0%	0.0%
Supplementary	25.5%	22.7%	19.9%	19.3%	16.6%	16.4%
Supplementary/Incidental	1.8%	0.0%	1.3%	1.7%	1.1%	1.5%
Incidental or not required	.9%	9.9%	10.6%	8.5%	9.9%	6.1%
Not stated	.9%	0.7%	2.6%	1.7%	1.1%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Explanation of Terms Used in Table 4

- Integral - The use of the computer is mandatory in the course and affects the grades.
- Supplemental - The use of the computer is an enhancement to the course material but is not mandatory. Students are urged to use the material for self improvement.
- Incidental/Not required - Students are informed of computer materials related to the course but are not required to use them.

TABLE 5

Computer Usage - Number of Hours Per Student Per SemesterNumber of Courses

	<u>Average 1978-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
0 hrs.*	0	0	1	1	1	1
0-5 hrs.	43	47	52	75	81	79
6-10 hrs.	30	33	28	41	41	48
11-25 hrs.	14	22	36	24	33	28
26+ hrs.	22	27	29	31	23	38
Not stated	1	3	5	4	2	2
Total	<u>110</u>	<u>132</u>	<u>151</u>	<u>176</u>	<u>181</u>	<u>196</u>

Computer Usage - Percent of Hours Per Student Per Semester

	<u>Average 1978-1982</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
0 hrs.*	0.0%	0.0%	0.7%	0.5%	0.5%	0.5%
0-5 hrs.	39.2%	35.6%	34.4%	42.6%	44.8%	40.3%
6-10 hrs.	26.8%	25.0%	18.5%	23.3%	22.7%	24.5%
11-25 hrs.	12.9%	16.7%	23.9%	13.6%	18.2%	14.3%
26+ hrs.	20.2%	20.5%	19.2%	17.6%	12.7%	19.4%
Not stated	.9%	2.2%	3.3%	2.3%	1.1%	1.0%
Total	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

* Used for record keeping, no actual student activity.

Explanation of Terms Used in Table 5

Departments were requested to report the total hours each student spent on the computer in a course during a semester based on the following categories:

0 - 5 hours	light usage
6 - 10 hours	moderate usage
11 - 25 hours	heavy usage
26+ hours	extensive usage

TABLE 6
Computer Facilities Used in Curricula 1988

<u>DEPARTMENT</u>	<u>Number of Courses Using Facilities**</u>				
	<u>HP3000</u>	<u>IBM 4381</u>	<u>Micros</u>	<u>RJE to UTK</u>	<u>Other*</u>
<u>College of Arts & Sciences</u>					
Art			3		
Biology	2		4		
Chemistry	9		3		1
Communications	1				
English			5		
Environmental Studies					
Foreign Language			6		
General Science			1		
Geoscience	2		5		
Interdisc. Studies					
Mathematics	7				
Music	4				
Physics	8		11		
Political Science	4				
Psychology	9		3		
Sociology/Anthropology	1				
Subtotal	47	0	41	0	1
<u>School of Business Administration</u>					
Accounting/Finance	1		14		
Business Administration					
Economics					
Management/Marketing					
Management	7	6	12		
Marketing	1				
Office Administration					2
Subtotal	9	6	26	0	2
<u>School of Education</u>					
Educational Administration & Supervision (counted under Ed.)	2				
Curriculum & Instruction			2		
Health & Physical Education	2				
Home Economics					
Special Education					
Subtotal	4	0	2	0	0

Computer Facilities Used in Curricula 1988 (cont'd)

<u>DEPARTMENT</u>	<u>HP3000</u>	<u>IBM 4381</u>	<u>Micros</u>	<u>RJE to UTK</u>	<u>Other*</u>
<u>School of Engineering</u>					
Computer Science	7	29	13		4
Engineering	12	14	8		7
	—	—	—	—	—
Subtotal	19	43	21	0	11
<u>College of Health and Human Services</u>					
Criminal Justice	6				
Human Services			4		
Nursing					
Social Work	2				
	—	—	—	—	—
Subtotal	8	0	4	0	0
<u>Undergraduate and Special Programs</u>					
Special Services			1		
	—	—	—	—	—
Subtotal	0	0	1	0	0
GRAND TOTAL (229) (All Departments)	87	49	95	0	14

* Includes PLATO system used by Engineering Department.

** Because more than one system was used in some courses, totals may not correspond to totals in previous tables.

<u>DEPARTMENT</u>	<u>HP3000</u>	<u>IBM 4381</u>	<u>Micros</u>	<u>RJE to UTK</u>	<u>Other</u>
College of Arts & Sciences	47	0	41	0	1
School of Business Administration	9	6	26	0	2
School of Education	4	0	2	0	0
School of Engineering	19	43	21	0	11
College of Health and Human Services	8	0	4	0	0
Undergraduate and Special Programs					
Total	87	49	95	0	14

TABLE 7
Connect Time of HP3000 Systems

<u>DEPARTMENT</u>	<u>1983-84</u>	<u>1984-85</u>	<u>1985-86</u>	<u>1986-87</u>	<u>1987-88</u>
Academic Computing	3295	3525	4457	3956	4598
Archaeology	249	35	0	2	0
Barter Computer	557	682	62	73	351
Biology	339	241	106	10	0
Business Administration -					
Accounting	361	163	70	274	286
Economics	172	146	60	263	120
Management	1139	2766	2255	2215	3239
Marketing	2180	615	45	60	16
Office Administration	1439	216	1	3	0
General	47	374	952	311	0
CECA	-	-	48	24	8
Chemistry	607	473	334	254	272
Communications	0	30	308	59	248
Computer Science	44944	41333	28858	7117	1624
Education -					
Admin. & Superv.	876	976	1267	705	928
Curr. & Inst.	53	4	24	27	37
Health & P.E.	8	13	25	101	6
Home Economics	36	22	4	0	0
Special Ed.	1	154	11	0	0
Engineering	14938	14093	7776	8634	3178
English	0	2	4	20	27
Environmental Studies	138	138	198	58	74
Foreign Language	-	-	26	0	0
Geoscience	166	142	22	53	0
GIS (Admissions)	1302	768	495	339	0
History	76	53	206	31	61
Health and Human Services -					
Criminal Justice	375	112	203	134	71
Nursing	-	-	52	19	100
Social Work	500	531	398	658	413
Library	109	397	653	390	384
Mathematics	3056	3539	3265	3110	4829
Music	50	0	25	1	49
Physics	730	779	388	355	555
Political Science	93	124	306	105	167
Psychology	1012	686	1063	874	2048
School - City	1585	589	362	11	1
County	369	20	0	5	3
Sociology	140	53	42	3	0
Undergrad. & Special Programs	8	1	58	90	120
Unspecified/System	17156	11965	12960	14122	26215
UTK (Graduate)	171	143	284	226	757
Word Processing	1965	4723	3951	4124	3742
TOTAL	100491	90628	71625	48714	54527

TABLE 8
CPU Time on HP3000 Systems

<u>DEPARTMENT</u>	<u>1983-84</u>	<u>1984-85</u>	<u>1985-86</u>	<u>1986-87</u>	<u>1987-88</u>
Academic Computing	65	72	107	78	96
Archaeology	8	1	0	0	0
Barter Computer	25	23	2	2	2
Biology	9	17	2	1	0
Business Administration -					
Accounting	6	6	2	30	6
Economics	2	2	2	5	2
Management	18	32	42	55	35
Marketing	41	12	2	3	0
Office Administration	15	1	0	0	0
General	9	8	22	8	0
CECA	-	-	3	2	0
Chemistry	69	45	52	42	11
Communications	0	1	48	1	6
Computer Science	655	578	531	91	20
Education -					
Admin. & Superv.	19	18	25	12	16
Curr. & Inst.	1	0	1	1	1
Health & P.E.	0	0	1	0	0
Home Economics	1	3	0	0	0
Special Ed.	0	2	0	0	0
Engineering	284	359	180	162	55
English	0	0	2	0	0
Environmental Studies	7	2	3	2	1
Foreign Language	-	-	1	0	0
Geoscience	2	2	1	1	0
GIS (Admissions)	6	7	5	2	0
History	4	1	5	5	3
Health and Human Services -					
Criminal Justice	1	0	4	3	1
Nursing	-	-	1	1	3
Social Work	10	8	9	24	12
Library	1	4	5	8	17
Mathematics	54	59	70	41	35
Music	4	0	0	0	1
Physics	19	24	7	4	5
Political Science	7	4	13	3	8
Psychology	18	13	25	26	76
School - City	12	4	3	0	0
County	2	0	0	0	0
Sociology	7	1	5	0	0
Undergrad. & Special Programs	0	0	2	1	5
Unspecified/System	402	537	401	226	211
UTK (Graduate)	2	5	11	5	20
Word Processing	29	55	51	37	47
TOTAL	1829	1906	1645	883	695

TABLE 9

Number of Jobs Transmitted to UTK Facilities

<u>Month</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
January	1932	3401	425	52	75
February	5225	6095	1730	69	71
March	4522	4599	2831	78	81
April	5172	6137	3137	44	74
May	3583	1207	667	112	
June	5838	2779	644	96	
July	3756	2154	135	66	
August	3934	416	75	81	
September	5820	5838	231	86	
October	9519	3852	294	88	
November	7264	5603	227	53	
December	2590	508	141	59	
Total	59155	42589	10537	884	301

TABLE 10
Departmental Usage of IBM 4381

<u>Department</u>	<u>Connect Hours</u>		<u>CPU Hours</u>	
	<u>FY 1986-87</u>	<u>FY1987-88</u>	<u>FY1986-87</u>	<u>FY1987-88</u>
Admin. Computing	2,911	533	13	10
Biology	2	0	0	0
CECA	65,789	60,597	72	99
Computer Science	7,536	11,110	94	186
Engineering	1,491	907	110	56
EPRI	1,900	1,276	90	69
Management	986	1,126	26	168
Marketing	85	62	0	0
MUSIC	80,050	79,728	254	232
Physics	1,302	39	1,072	0
System	126,656	137,749	365	693
Unstated	162	793	5	3
Miscellaneous	232	21,594	27	116
Total	289,102	315,514	2,128	1,632

TABLE 11
Monthly Usage on IBM 4381 System

<u>Department</u>	<u>Connect Hours</u>		<u>CPU Hours</u>	
	<u>FY 1986-87</u>	<u>FY1987-88</u>	<u>FY1986-87</u>	<u>FY1987-88</u>
July	17,198	23,335	108	91
August	16,336	21,392	213	68
September	22,224	24,766	77	129
October	26,646	30,267	95	183
November	28,961	28,998	133	186
December	21,974	22,064	226	74
January	25,383	26,635	493	98
February	26,027	29,222	219	159
March	27,657	28,843	169	148
April	30,123	30,974	220	159
May	23,002	23,856	103	178
June	23,571	25,162	72	159
Total	289,102	315,514	2,128	1,632

SCHOOL OF ARTS AND SCIENCES

ART

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
209	Typography & Layout	Wallace	Graphics	Micro	1	24	0-5 hrs.	Supplemental Incidental
250	Graphic Design: Publications	Wallace	Graphics	Micro	1	24	0-5 hrs.	Supplemental Incidental
309	Graphic Design	Wallace	Graphics	Micro	1	24	0-5 hrs.	Supplemental Incidental

SCHOOL OF ARTS AND SCIENCES

BIOLOGY

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
306	Ecology	Litchford	Data Analysis System Simulation	HP3000 Mac Apple II	1	20-40	11-25 hrs	Integral
307	Ecology	Litchford	Data Analysis System Simulation	HP3000 Mac Apple II	1	20-40	11-25 hrs	Integral
315	Evolution	Nelson	Data Analysis	Mac	1	20-30	6-10 hrs.	Integral
450	Systematics	Nelson	Data Analysis	Mac	1	16	6-10 hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

CHEMISTRY

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
121	General Chemistry I	All	CAI	HP3000	13	50	6-10 hrs.	Supplemental
122	General Chemistry II	All	CAI	HP3000	6	50	6-10 hrs.	Supplemental
125	Honors General Chemistry	Kutz	CAI Simulation	Micro HP3000	1	15	6-10 hrs.	Integral
341	Quantitative Analysis	Mebane	CAI	HP3000	2	35	6-10 hrs.	Supplemental
352	Organic Chemistry	Gross	Simulation Problem Solving	Micro	4	20	0-5 hrs.	Integral
371	Physical Chemistry I	Kutz Rybolt	Simulation Problem Solving Interfacing	Micro HP3000	2	15	6-10 hrs.	Supplemental
372	Physical Chemistry II	Kutz	Problem Solving	HP3000	2	12	11-25 hrs	Integral
436	Advanced Inorganic	Grant	Problem Solving	HP3000	1	15	0-5 hrs.	Supplemental
443	Instrumental Analysis	McNeely Lynch	Simulation Problem Solving	HP3000	1	16	6-10 hrs.	Integral
497	Research	Kutz	Problem Solving	HP3000 IBM 370	3	1	0-5 hrs.	Integral

SCHOOL OF ART AND SCIENCES

COMMUNICATIONS

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
450	Communication Research	Rushing	Data Analysis	HP3000	1	20	0-5 hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

ENGLISH

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
105	Dev. Writing I	Meagher/ Staff	Word Processing	Macintosh	8	20	11-25 hrs	Integral
106	Dev. Writing II	Meagher/ Staff	Word Processing	Macintosh	8	20	11-25 hrs	Integral
121	Rhetoric & Composition	Meagher/ Staff	Word Processing	Macintosh	48	25	0-5 hrs.	Supplemental
122	Rhetoric & Composition	Meagher/ Staff	Word Processing	Macintosh	44	25	0-5 hrs.	Supplemental
277	Prof. Writing	Bender	Word Processing	Macintosh		20	0-5 hrs.	Supplemental

SCHOOL OF ARTS AND SCIENCES

FOREIGN LANGUAGES

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
101	Elem. French	Sturzer	CAI	Micros	1	15	0-5 hrs.	Incidental Not Required
102	Elem. French	Sturzer	CAI	Micros	1	24	0-5 hrs.	Incidental Not Required
211	Intermediate French for Conversation	Sturzer	CAI	Micros	1	24	0-5 hrs.	Incidental Not Required
212	Intermediate French for Conversation	Sturzer	CAI	Micros	1	24	0-5 hrs.	Incidental Not Required
101	Elem. German	Sturzer	CAI	Micros	1	25	0-5 hrs.	Incidental Not Required
102	Elem. German	Sturzer	CAI	Micros	1	25	0-5 hrs.	Incidental Not Required

SCHOOL OF ARTS AND SCIENCES

GENERAL SCIENCE

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
111	General Science	Staff	Simulation	Micro	1	120	0-5 hrs	Integral

SCHOOL OF ARTS AND SCIENCES

GEOSCIENCES AND ENVIRONMENTAL STUDIES

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
111	Intro. to Geology	Churnet	Demo of Laser Disk Image	Apple IIe	1	60	0-5 hrs.	Integral
150	Concepts in Env'l Science	Perfetti	Problem Solving Population Growth Curves	HP3000	4	25	0-5 hrs.	Supplemental
307	Tennessee Geology		Program	Apple IIe	1	11	0-5 hrs.	Integral
340	Env'l Survey Methods	Litchford	Data Analysis Micros	HP3000	1	10	6-10 hrs.	Supplemental
406	Lithology		Demo of Laser Disk Image	Apple IIe	1	25	0-5 hrs.	Integral
465	Remote Sensing	Litchford	Analysis of Digital Data	Micro	1	20	26+ hrs.	Integral
501	Tennessee Geology		Program	Apple IIe	1	11	0-5 hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

MATHEMATICS

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
105	Elementary Algebra	Darken	CAI	HP3000	21	25	0-5 hrs.	Incidental
106	Intermediate Algebra	Darken	CAI	HP3000	29	25	0-5 hrs.	Incidental
303	Discrete Structures	Cuffe Nymann	Problem Solving	HP3000	4	20	26+ hrs.	Integral
308	Numerical Methods	Rozema	Problem Solving	HP3000	2	20	26+ hrs.	Integral
424	Oper. Research/ Nonlinear	Kindermann	Problem Solving	HP3000	1	12	6-10 hrs.	Integral
418	Advanced Numerical Methods	Walters	Problem Solving	HP3000	1	5	26+ hrs.	Integral
518	Advanced Numerical Methods	Walters	Problem Solving	HP3000	1	10	26+ hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

MUSIC

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
107	Theory I	Tempko	CAI	HP3000	3	20	6-10 hrs.	Supplemental
108	Theory I	Tempko	CAI	HP3000	3	18	6-10 hrs.	Supplemental
207	Theory II	Sanders	CAI	HP3000	2	13	6-10 hrs.	Supplemental
208	Theory II	Sanders	CAI	HP3000	1	20	6-10 hrs.	Supplemental

SCHOOL OF ARTS AND SCIENCES

PHYSICS

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
103	Gen. Physics	Lane	Simulation	Micro	2	50	1-5 hrs.	Integral
104	Gen. Physics	Huang	Simulation Graphics	Micro	2	40	1-5 hrs.	Integral
230	Principles of Physics, Statics, Mechanics Thermodyn.	Peterson Akers	Data Analysis	HP3000	1	20	6-10 hrs.	Integral
231	Principles of Physics, Electricity, Magnetism	Lowe Marlowe	Problem Solving Simulation Data Analysis Graphics CAI*	HP3000 Micro	3 2	40 15	6-10 hrs.	Integral
232	Principles of Physics, Optics, Mod. Physics	Davis Lane Marlowe	Problem Solving Simulation Data Analysis Graphics CAI*	HP3000 Micro	2	50	6-10 hrs.	Integral
303	Basic Electronics	Peterson Marlowe	Interfacing Machine Language Basic Program for Equipment Control	Micro	1	10	26+ hrs.	Integral

PHYSICS (cont'd)

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
310	Thermo- dynamics	Lane	Simulation Graphics	Micro	1	7	6-10 hrs.	Integral
341	Intro to Theoretical Mechanics I	Davis Peterson	Problem Solving Data Analysis Graphics*	HP3000 Micro	1	6	6-10 hrs.	Integral
342	Theoretical Mechanics II	Davis Lane	Problem Solving Simulation Graphics*	HP3000 Micro	1	6	6-10 hrs.	Integral
411	Intro to Quantum Mechanics	Peterson	Simulation Graphics	HP3000 Micro	1	10	6-10 hrs.	Integral
424	Instrumenta- tion, Inter- facing and Micros	Lane	Problem Solving Simulation Graphics*	HP3000 Micro	1	5	11-25 hrs	Integral
482	Nuclear Physics Lab	Peterson	Instrumt. Control Data Analysis Graphics	Micro	1	8	26+ hrs.	Integral
498	Individual Studies	Walker	Graphics	HP3000	1	5	6-10 hrs.	Integral

* Listed as multi-use in Table 3

SCHOOL OF ARTS AND SCIENCES

POLITICAL SCIENCE

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
202	Political Behavior	Brodsky	Data Analysis	HP3000	1	20	6-10 hrs.	Integral
223	Intro. to Public Administration	Bush	Data Analysis Simulation	HP3000	1	14	0-5 hrs.	Integral
242	International Relations	Swans- brough	Simulation	HP3000	1	18	0-5 hrs.	Integral
523	Public Administration	Bush	Data Analysis	HP3000	1	16	0-5 hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

PSYCHOLOGY

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
101	Introduction to Psychology *	Watson	Data Storage	HP3000	4	150	0 hrs.	Incidental Not required
201	Research Methodology: Intro to Statistics	Biderman	Data Analysis	HP3000	2	25	6-10 hrs.	Integral
202	Research Methodology: Intro Statistics in Psychology	Green	Problem Solving	HP3000	1	17	0-5 hrs.	Integral
312	Sensation & Perception	Biderman	Problem Solving Demos Simulations CAI**	Micro HP3000	1	25	6-10 hrs.	Integral
313	Cognition	Warren- Leubecher	Demo Data Analysis Simulations	Micro	1	25	0-5 hrs.	Integral
401	Intermediate Statistics in Behavioral Sciences	Biderman	Data Analysis	HP3000	1	10	11-25 hrs	Integral
510	Applied Research I	Biderman	Data Analysis Problem Solving CAI**	HP3000	1	20	0-5 hrs.	Integral

SCHOOL OF ARTS AND SCIENCES

PSYCHOLOGY (cont'd)

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
511	Research Methods in Industrial/ Organizational Psychology	Biderman	Data Analysis	HP3000	1	20	6-10 hrs.	Integral
513	Advanced Research Techniques	Biderman	Data Analysis	HP3000	1	15	11-25 hrs	Integral
514	Applied Research II	Warren- Leubecker	Data Analysis	HP3000	1	15	11-25 hrs	Integral
501	Organizational Effectiveness & Productivity	S. Jones	Word Processing Spreadsheet	Micro	1	24	11-25 hrs	Integral

* The computer was used in this course to store data on student progress; students did not use the computer.

** Listed as multi-use in Table 3.

SCHOOL OF ARTS AND SCIENCES

SOCIOLOGY AND ANTHROPOLOGY

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
151	Principles of Sociological Analysis	Geevarghese Robinson Cahill	CAI	HP 3000	7	35	0-5 hrs.	Supplemental

SCHOOL OF BUSINESS ADMINISTRATION

ACCOUNTING AND FINANCE

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
201	Principles of Accounting I	Alvis McLaurin Riley, W.	CAI	Micro	12	40	6-10 hrs.	Integral
202	Principles of Accounting II	Riley, W.	Problem Solving	Micro	4	35	0-5 hrs.	Integral
302	Essentials of Managerial Finance	Fulmer Bertin Riley, N. Shah	Problem Solving	Micro	7	35	6-10 hrs.	Integral
303	Intermediate Accounting I	Willis Alvis Gavin	Problem Solving	Micro	3	35	0-5 hrs.	Integral
304	Intermediate Accounting II	Willis Alvis Gavin	Problem Solving	Micro	2	35	0-5 hrs.	Integral
305	Managerial Cost Accounting	Alvis	Problem Solving	Micro	3	35	0-5 hrs.	Integral
307	Federal Tax Accounting	Riley, W.	Problem Solving	Micro	3	35	0-5 hrs.	Integral
309	Advanced Tax Accounting	Pauley	Simulation	Micro	4	30	6-10 hrs.	Integral
321	Accounting and Finance	Riley, N.	Problem Solving	Micro	2	30	6-10 hrs.	Integral
401	Advanced Accounting	Alvis	Problem Solving	Micro	2	30	6-10 hrs.	Integral

SCHOOL OF BUSINESS ADMINISTRATION

ACCOUNTING AND FINANCE (cont'd)

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
504	Fundamentals of Managerial Finance	Riley, N.	Problem Solving	Micro	1	20	6-10 hrs.	Integral
532	Tax Business Accounting	Pauley	Simulation	Micro	1	10	6-10 hrs.	Integral
542	Tax Plan	Pauley	Simulation	Micro	1	10	6-10 hrs.	Integral
546	Investments	Riley, N.	Problem Solving	Micro	1	20	6-10 hrs.	Integral
547	Finance Accounting	Gavin	Data Analysis	HP3000	1	15	6-10 hrs.	Supplemental

SCHOOL OF BUSINESS ADMINISTRATION

MANAGEMENT

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
211	Statistical Methods for Business I	Ahmadi Raiszadeh Macomber Johnson	Data Analysis	HP3000 Micro IBM 4381	11	45	0-5 hrs.	Integral
212	Statistical Methods for Business II	Ahmadi Raiszadeh Macomber Johnson	Data Analysis	HP3000 Micro IBM 4381	10	40	6-10 hrs.	Integral
311	Operations Management	Raiszadeh Macomber Dileepan	Data Analysis	HP3000 Micro IBM 4381	4	40	0-5 hrs.	Supplemental
315	Management Concept	White	Simulation	Micro	2	45	11-25 hrs	Integral
356	Management Science	Ahmadi Raiszadeh Johnson	Linear Program Data Analysis	HP3000 Micro IBM 4381	6	25	11-25 hrs	Integral
440	Business Policy	Parker	Data Analysis	Micro	4	24	20-30 hrs	Integral
456	Forecasting	Macomber	Data Analysis	Micro	1	30	11-25 hrs	Integral
460	Info. Systems	Dileepan	CAI Data Analysis	Micro IBM 4381	1	30	11-25 hrs	Integral
503	Business Statistics	Macomber Ahmadi	Data Analysis	HP3000 Micro	2	45	11-25 hrs	Integral

SCHOOL OF BUSINESS ADMINISTRATION

MANAGEMENT (cont'd)

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
511	Research Methods	Ahmadi	Data Analysis SPSS	HP3000 IBM 4381	2	30	26+ hrs.	Integral
512	MIS	Dileepan	CAI	Micro	2	30	11-25 hrs	Integral
570	Problems in Operations	Helms	CAI Data Analysis	HP3000	1	20	0-5 hrs.	Integral
577	Production and Inventory Control	Raiszadeh	CAI Data Analysis	Micro	1	20	6-10 hrs.	Integral
595	Business Policy	Parker	Simulation	Micro	2	16	6-10 hrs.	Integral

SCHOOL OF BUSINESS ADMINISTRATION

MARKETING

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
450	Marketing Research	Haynes	Data Analysis	HP3000	1	30	0-5 hrs.	Integral

SCHOOL OF BUSINESS ADMINISTRATION

OFFICE ADMINISTRATION

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
310	Business Communications	Nixon West	Problem Solving CAI Simulation	IBM PC	6	35	5 hrs.	Integral
450	Office Information Systems	Nixon	Report Writing	IBM PC	1	20	11-25 hr.	Integral

SCHOOL OF EDUCATION

EDUCATIONAL ADMINISTRATION AND SUPERVISION

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
501	Methods of Educational Research	Whittacre	CAI	HP3000	6	20	26+ hrs.	Integral
598	Research	Whittacre	Data Analysis and SPSS	HP3000	2	8	11-25hrs	Integral

SCHOOL OF EDUCATION

CURRICULUM & INSTRUCTION

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
402	Sci. Methods- Elementary	Benson	Problem Solving	Micro	2	10	0-5 hrs.	Integral
404	Math Methods- Elementary	Wofford	Problem Solving	Micro	2	10	0-5 hrs.	Integral

SCHOOL OF EDUCATION

HEALTH, PHYSICAL EDUCATION AND RECREATION

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
401	Test and Measurements	Fanning	CAI	HP3000	1	25	11-25 hrs	Integral
456	Research	Ezell	Data Analysis	HP3000	1	20	3-4 hrs.	Integral

SCHOOL OF ENGINEERING

COMPUTER SCIENCE

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
118	Computer Programming With Fortran	Staff	Problem Solving	IBM 4381	3	25	26+ hrs.	Integral
121	Computer Programming I	Staff	Problem Solving	IBM 4381	4	25	26+ hrs.	Integral
122	Computer Programming II	Staff	Problem Solving	IBM 4381	4	18	26+ hrs.	Integral
201	Assembly Language Programming	Staff	Problem Solving	IBM 4381	3	25	26+ hrs.	Integral
210	Computer Info Systems I	Staff	Problem Solving	Apple PC HP3000	21	30	26+ hrs.	Integral
211	Computer Info Systems II	Staff	Problem Solving	Apple PC HP3000	5	30	26+ hrs.	Integral
251	Intro to File Processing	Staff	Problem Solving	PC IBM 4381 IBM 370 via HP3000	2	20	0-5 hrs.	Integral
252	Intro to Computer Organization	Staff	Problem Solving	PC	2	20	0-5 hrs.	Integral
280	Accelerated COBOL	Staff	Problem Solving	IBM 4381	3	25	26+ hrs.	Integral
301	Systems Programming	Staff	Problem Solving	IBM 4381	2	25	26+ hrs.	Integral

COMPUTER SCIENCE (cont'd)

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
312	Data Structures	Staff	Problem Solving	IBM 4381	2	25	26+ hrs.	Integral
320	Operating Systems	Staff	Problem Solving	IBM 4381	2	30	0-5 hrs.	Integral
335	File Processing	Staff	Problem Solving	IBM 4381	1	15	26+ hrs.	Integral
350	Software Engineering	Staff	Problem Solving	IBM 4381 HP3000	2	25	26+ hrs.	Integral
410	Program Language Structures	Staff	Problem Solving	IBM 4381	1	30	26+ hrs.	Integral
430	Topics in Simulation	Staff	Problem Solving Simulation	IBM 4381	1	15	26+ hrs.	Integral
435	Data Base Info System	Staff	Problem Solving	HP3000 IBM PC IBM 4381	2	25	26+ hrs.	Integral
460	Computer Architecture	Staff	Problem Solving	IBM 4381	2	25	0-5 hrs.	Integral
499	Group Studies	Staff	Other	IBM 4381 HP 3000 PC	3	5	11-25 hrs	Integral
501	Structured Programming Data	Staff	Problem Solving	PC IBM 370 via HP3000 IBM 4381	1	15	26+ hrs.	Integral
502	Computing Systems	Staff	Problem Solving	IBM 4381	1	15	26+ hrs.	Integral

COMPUTER SCIENCE (cont'd)

1988						Student/	Time/	How
Course	Title	Instructor	Type of Material	System	# of Sects.	Section Approx.	Students/ Semester	Utilized In Course
515	Advanced Data Base System	Staff	Problem Solving	IBM 4381	1	10	26+ hrs.	Integral
530	Compiler Systems	Staff	Problem Solving	Micros IBM 4381	1	10	26+ hrs.	Integral
535	Mini Micro Computers	Staff	Problem Solving	Micros IBM 4381	1	15	26+ hrs.	Integral
536	Dist. Comp. Sys	Staff	Problem Solving	Micros IBM 4381	1	13	0-5 hrs.	Integral
560	Advanced Computer Graphics	Staff	Problem Solving	Micros IBM 4381	1	10	26+ hrs.	Integral
580	Artificial Intelligence	Staff	Problem Solving	IBM 4381 IBM PC	1	15	11-25 hrs	Integral
590	Independent Projects	Staff	Other	IBM 4381 IBM 370 via two HP3000 Micro HP3000	2	5	26+ hrs.	Integral
591	Special Topics	Staff	Problem Solving	IBM 4381	2	5	26+ hrs.	Integral
599	Thesis	Staff	Problem Solving	IBM 4381 Micros HP 3000 IBM 370	2	5	26+ hrs.	Integral
102	Intro. Comp.	Staff	Problem Solving	Micros HP 3000 IBM 4381	4	20	26+ hrs.	Integral
450		Staff	Problem Solving	Micros IBM 4381	1	20	26+ hrs.	Integral

SCHOOL OF ENGINEERING

ENGINEERING

1988

Course	Title	Instructor	Type of Material	System	# of Sects	Student/ Section Approx.	Time/ Students/ Semester	How Utilized In Course
103	Basic Engr. Science I	Jones Cassell Hiestand McDonald	Problem Solving	PLATO	5	28	0-5 hrs.	Incidental
104	Basic Engr. Science II	Jones Cassell Hiestand McDonald	Problem Solving	PLATO	5	28	0-5 hrs.	Incidental
124	Intro to Engineering Computations	Cunningham	Problem Solving	HP3000	6	30	26+ hrs.	Integral
225	Engineering Computations and Numerical Techniques	Hiestand Schonblom Carney	Problem Solving	IBM 4381	7	30	26+ hrs.	Integral
272	Dynamic Systems I	Carney Smith	Problem Solving	HP3000	6	30	0-5 hrs.	Integral
307	Fluid Mechs.	Jones Knight	Problem Solving	HP3000	3	30	6-10 hrs.	Supplemental
311	Pollution Controls	Cunningham	Simulation	HP3000 IBM 4381	1	80	6-10 hrs.	Integral
322	Probability & Statistics for Engr.	Schonblom	Problem Solving Data Analysis	HP3000	5	25	6-10 hrs.	Integral
325	Systems Dynamics	Parten Fashoro	Simulation Graphics	IBM 4381	5	25	0-5 hrs.	Integral

ENGINEERING (cont'd)

Course	Title	Instructor	Type of Material	System	# of Sects	Student/ Section Approx.	Time/ Students/ Semester	How Utilized In Course
372	Electronics	Todd Jones	Problem Solving	HP3000	5	30	0-5 hrs.	Integral
373	Auto Controls	Fashoro Carney	Problem Solving	IBM PS/2	4	25	11-25 hrs	Integral
379	Controls Lab	Fashoro	Simulation Problem Solving	IBM 4381 IBM PS/2	6	17	26+ hrs.	Integral
380	Intro to Engr. Design	McMahon	Data Analysis	IBM PC Mac	1	30	11-25 hrs	Integral
405	Heat & Mass Transfer	Damshala McDonald	Problem Solving	HP3000	2	30	11-25 hrs	Supplemental
430	Thermal Syst. Design	J. Henry	Not Stated	IBM 4381	1	Not Stated	Not Stated	Not Stated
431	Chemistry Process Principles	J. Henry	Not Stated	IBM 4381	1	Not Stated	Not Stated	Not Stated
432	Chemical Operations	Cunningham	Problem Solving	HP3000	1	40	6-10 hrs.	Integral
434	Chemical Kinetics and Reactor Design	Cunningham	Problem Solving	HP3000	1	10	0-5 hrs.	Supplemental
436	Thermal Component Design	Hiestand	Problem Solving	IBM 4381	1	10	0-5 hrs.	Integral
438	Advanced Fluid Dynamics	M. Jones	Problem Solving	IBM 4381	1	7	0-5 hrs.	Supplemental
445	Mechanical Vibration	W. Gurley	Simulation Graphics	IBM 4381	1	20	6-10 hrs.	Integral

ENGINEERING (cont'd)

Course	Title	Instructor	Type of Material	System	# of Sects	Student/ Section Approx.	Time/ Students/ Semester	How Utilized In Course
446	Advanced Mechanics of Materials	W. Gurley	Simulation Graphics	IBM 4381	1	20	6-10 hrs.	Integral
450	Ind. Engr. Design	Hailey	Problem Solving Simulation Data Analysis	IBM 4381	1	10	0-5 hrs.	Supplemental
452	Engr.Economy	McMahon	Data Analysis	IBM 4381	1	30	0-5 hrs.	Incidental
458	Facility Design	Evans	Simulation Data Analysis	IBM 4381	1	20	0-5 hrs.	Supplemental
465	Structural Engineering	Foster	Problem Solving Data Analysis Graphics	IBM PC	1	10	11-25 hrs	Integral
468	Elementary Structural Methods	Wynn	Problem Solving Data Analysis Graphics	HP3000 IBM 4381	1	25	11-25 hrs	Integral
471	Electrical Energy Systems	Eltom	Simulation	IBM PC	1	10	6-10 hrs.	Integral
472	Electrical Energy Systems	Eltom	Simulation	IBM PC	1	10	0-5 hrs.	Supplemental
477	Instrumen- tation	Jones	Simulation	IBM PS/2	1	25	11-25 hrs	Integral

ENGINEERING (cont'd)

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
478	Sampled Data Systems	Parten	Problem Solving	IBM PS/2	1	23	0-5 hrs.	Supplemental
490	Senior Design Exper.	Evans McMahon	Problem Solving Reporting	HP3000 IBM PC	4	20	0-5 hrs.	Integral
502	B 162 Transforms	Parten	Problem Solving	IBM PS/2	4	12	6-10 hrs.	Integral
552	Ind. Stat. & Q.C.	Evans	Simulation Data Analysis	HP3000	1	10	11-25 hrs	Integral
572	Power Sys. I	Eltom	Simulation	HP3000	1	10	0-5 hrs.	Integral
574	Power Sys. II	Eltom	Simulation	HP3000	1	10	0-5 hrs.	Integral

COLLEGE OF HEALTH AND HUMAN SERVICES

CRIMINAL JUSTICE

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
301	Information Systems in Criminal and Juvenile Justice	Thompson	Data Analysis	HP3000	2	35	0-5 hrs.	Integral
322	Planning	Staff	Data Analysis	HP3000	1	30	0-5 hrs.	Integral
411	Research Methods	Bush	Data Analysis	HP3000	1	30	0-5 hrs.	Supplemental
500	Research Methods	Field	Data Analysis	HP3000	1	15	0-5 hrs.	Supplemental
520	Crime Analysis	Anderson	Data Analysis	HP3000	2	12	0-5 hrs.	Supplemental
530	Systems Planning	Anderson	Data Analysis	HP3000	1	10	0-5 hrs.	Supplemental

COLLEGE OF HEALTH AND HUMAN SERVICES

HUMAN SERVICES

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
100	Principles of Effective Study	Thow	Word Processing	Mac	2	40	0-5 hrs.	Integral
300	Perspectives on Work in Professions	Arfken	Word Processing	Mac	5	30	0-5 hrs.	Supplemental
440	Human Service: Supervision	Prinz	Word Processing	Mac	1	15	0-5-hrs.	Integral
450	Seminar in H.S. Admin.	Anderson	Word Processing	Mac	1	15	0-5 hrs.	Integral

COLLEGE OF HEALTH AND HUMAN SERVICES

SOCIAL WORK

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	<u>Type of Material</u>	<u>System</u>	<u># of Sects.</u>	<u>Student/ Section Approx.</u>	<u>Time/ Students/ Semester</u>	<u>How Utilized In Course</u>
250	Charity in Western Civilization	Brown	Simulation	HP 3000	5	200	0-5 hrs.	Supplemental
400	Social Welfare Policy Research	Brown	Data Analysis Simulation	HP 3000	1	9	6-10 hrs.	Integral

UNDERGRADUATE AND SPECIAL PROGRAMS

SPECIAL SERVICES

1988

<u>Course</u>	<u>Title</u>	<u>Instructor</u>	Type of <u>Material</u>	<u>System</u>	# of <u>Sects.</u>	Student/ <u>Section</u> <u>Approx.</u>	Time/ <u>Students/</u> <u>Semester</u>	How <u>Utilized</u> <u>In Course</u>
Special Servs.	Academic Support Services	Randall Mickler	Word Proc'g CAI Testing	Micro	Open Lab 110 (approx)	5-6 hrs.	Supplemental	